Nuytsia The journal of the Western Australian Herbarium

30: 19–22 Published online 28 March 2019

SHORT COMMUNICATION

Acacia corusca (Fabaceae: Mimosoideae), a new species from the Pilbara bioregion in north-western Australia

Acacia corusca J.P.Bull, S.J.Dillon & Brearley, *sp. nov.*

Type: *c.* 35 km east-northeast of Newman, Western Australia [precise locality withheld for conservation reasons], 26 April 2014, *J. Bull & D. Roberts* ONS A 27.01 (*holo*: PERTH 08612277; *iso*: CANB).

Acacia sp. East Fortescue (J. Bull & D. Roberts ONS A 27.01), Western Australian Herbarium, in *FloraBase*, https://florabase.dpaw.wa.gov.au [accessed 13 February 2019].

Rounded to broadly rounded, robust, multi-stemmed *shrub* or *small tree* 1.5–4.0(–5.0) m high, 1.5–5.0(–6.0) m wide. *Bark* grey to dark grey, smooth except longitudinally fissured and fibrous towards the base of mature stems. *Branchlets* terete, slightly angular at extremities, youngest branchlets ribbed, with a dense indumentum of appressed, flattened, pale yellow to white, simple hairs and scattered, red-brown, glandular hairs between the ribs, and a dense indumentum of red-brown, glandular hairs on the ribs, a moderately thick layer of yellow, translucent resin often obscuring the indumentum, both the resin and indumentum becoming absent with age. *New shoots* resinous, the young phyllodes with a conspicuous marginal nerve invested with dense, red-brown, glandular hairs and the faces with a dense indumentum of pale yellow to white, appressed, flattened, simple hairs and scattered, red-brown, glandular hairs, the indumentum somewhat obscured by resin. *Stipules* triangular, red-brown, (0.4–)0.5–0.65 mm long. *Phyllodes* narrowly elliptic, narrowed at both ends, slightly kinked at the gland, (36–)38–72 mm long (occasionally interspersed with a few less than 35 mm long), 4.1–8.7 mm wide, l:w = 5.0–13.4, ascending to erect, straight to shallowly incurved or shallowly recurved, green to dark green, with a moderately dense indumentum of flattened, appressed, simple hairs and scattered red-brown glandular hairs, indumentum becoming sparser with age, slightly resinous; midrib (and sometimes 2 additional, imperfectly developed, longitudinal nerves either side of the midrib) straighter and slightly more pronounced than the minor nerves, often becoming obscure towards the phyllode apex, minor nerves numerous and anastomosing to form a dense reticulum with longitudinally elongated nerve-islands; marginal nerve pale yellow with moderately dense red-brown glandular hairs embedded in resin; apex acute to acuminate, innocuous, often shallowly recurved; pulvinus 2.0–5.3 mm long; gland on upper margin of phyllode (2.9–)3.4–13.4 mm above the pulvinus, not prominent. *Inflorescences* simple or vestigial racemes 0.5–0.8 mm long, initiated in the axils of young phyllodes; peduncles 3.0–6.2 mm long, with a sparse to moderately dense indumentum of short, appressed hairs, resinous; basal peduncular bract persistent, single, ovate, 1.0–1.4(–1.65) mm long, yellow to red-brown, with a moderately dense indumentum of appressed, simple hairs; spikes (10–)11.5–25(–27) mm long, flowers densely arranged. *Bracteoles* 0.9–1.1 mm long; claws narrowly oblong to linear, glabrous; lamina ovate, thickened proximally, ciliolate and with scattered, glandular hairs. *Flowers* 5-merous; sepals united for up to ¼ (–almost ½) of their length, 0.5–1.1 mm long, narrowly ovate, slightly expanded at the apex, sparsely papillose on margins becoming denser at apex together with simple hairs, abaxial face at apex papillose; petals 1.3–1.8(–1.9) mm long, glabrous, 1-nerved; ovary densely sericeous. *Pods* narrowly oblong, flat, scarcely raised over seeds, 17–58 mm long, 2.7–5.1 mm wide, coriaceous-crustaceous, straight, resinous but not sticky, yellow-brown to brown, with a sparse indumentum of

https://florabase.dpaw.wa.gov.au/nuytsia/ ISSN 2200-2790 (Online) ISSN 0085-4417 (Print)

appressed, white hairs, with numerous anastomosing longitudinal nerves; marginal nerve discrete, yellow. *Seeds* longitudinal in pods, obloid-ellipsoid, (3.3–)3.5–5.5(–6.0) mm long, (1.5–)1.8–3.1 mm wide, brown; areole 'u'-shaped, 0.2–0.3 mm long, 0.15–0.3 mm wide; funicle expanded into a poorly defined, once-folded, terminal aril. (Figure 1)

Diagnostic features. *Acacia corusca* can be distinguished from other Western Australian *Acacia* species by the following combination of characters: phyllodes with 1(–3) longitudinal nerves that are slightly more prominent than the minor nerves and with numerous anastomosing minor nerves that form a dense reticulum with longitudinally elongated nerve islands; a gland that is distinctly distant from the pulvinus resulting in a slight though distinct kink in the phyllode (Figure 1B); the presence of red-brown glandular hairs on new growth and along the margins of the phyllodes; cylindrical inflorescences (Figure 1C); sepals that are united for ¼(–½) the length of the calyx; narrow, firm-textured pods with anastomosing longitudinal nerves (Figure 1D).

Selected specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 16 July 2015, *J. Bull* ONS AEF 1 (PERTH); 16 July 2015, *J. Bull* ONS AEF 3 (PERTH); 3 Aug. 2015, *J. Bull & D. Brearley* ONS 2.4 (PERTH); 3 Aug. 2015, *J. Bull & D. Brearley* ONS 2.5 (PERTH); 25 Apr. 2014, *J. Bull & D. Roberts* ONS A 25 (PERTH); 25 Apr. 2014, *J. Bull & D. Roberts* ONS A 57 (PERTH); 27 Apr. 2014, *J. Bull & D. Roberts* ONS A 100 (PERTH); 8 July 2014, *J. Bull & D. Roberts* ONS S 71 (PERTH); 10 July 2014, *J. Bull & D. Roberts* ONS S 107 (PERTH); 13 Sep. 2014, *J. Bull & D. Roberts* ONS R 25 (PERTH); 13 Sep. 2014, *J. Bull & D. Roberts* ONS R 28 (PERTH).

Phenology. Flowering has been observed from mid-autumn to late winter (April to August), and fruiting from late winter to mid-spring (August to October). Like many arid dwelling *Acacia* species, *A. corusca* appears to set fruit in response to adequate winter rainfall (Preece 1971; Mangadas & Fox 2002) but further study is required to confirm this.

Distribution and habitat. *Acacia corusca* occurs east-northeast of the town of Newman in the southeast Pilbara bioregion of Western Australia. A total of 567 plants have been recorded from three populations covering approximately 8.1 hectares (Onshore Environmental 2014, 2015a). Extensive targeted surveys of the surrounding region were undertaken but no further populations were located (Onshore Environmental 2015a, 2015b). *Acacia corusca* grows in red-brown sandy-loam soils on hill crests, ridges, slopes and minor drainage lines upon low, subdued and undulating stony hills. It rarely grows on hill summits and the largest populations appear to prefer exposed hill ridges, outcrops and rocky hill slopes composed of Boolgeeda Iron Formation overlying Woongarra Rhyolite (Figure 1A). Associated vegetation is typically spinifex hummock grassland of *Triodia pungens* and *Triodia vanleeuwenii* with scattered low trees of *Eucalyptus leucophloia* subsp. *leucophloia*, *Acacia aptaneura* and *Grevillea berryana*, open shrublands of *Grevillea wickhamii* subsp. *hispidula*, *Senna glutinosa* and *Acacia marramamba* and scattered tussock grasses of *Eriachne mucronata* and *Cymbopogon ambiguus*.

Conservation status. *Acacia corusca* is listed as Priority One under Conservation Codes for Western Australian Flora (Smith & Jones 2018), as *Acacia* sp. East Fortescue (J. Bull & D. Roberts ONS A 27.01).

Etymology. The epithet is from the Latin *corusco* (to flash, glitter or shimmer), in reference to the shimmering effect of the dark green foliage on windy days. This character was valuable in locating populations of *Acacia corusca* from a distance, especially on typically exposed hill slopes.

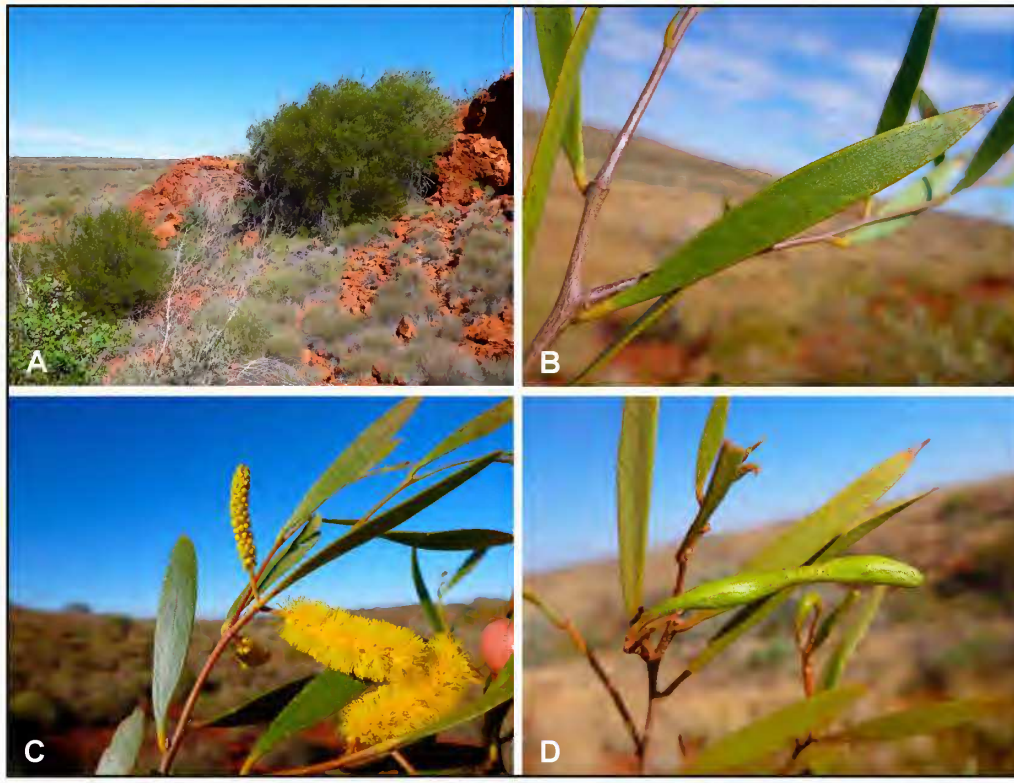

Figure 1. *Acacia corusca*. A – habit and habitat; B – branches showing ascending phyllodes with longitudinal reticulation and gland on adaxial edge; C – upper branch with both immature and mature cylindrical flowering spikes; D – immature pod with two seeds. Image from *J. Bull & D. Roberts* ONS R 28 (PERTH) (D). Photographs by Jerome Bull.

Affinities. Acacia corusca appears to have affinities with *A. melleodora* Pedley and *A. dictyophleba* F.Muell, both of which also occur in the Pilbara. These taxa are similar to *A. corusca* in that they are rounded shrubs, have a phyllode nervature pattern comprising a dense reticulum of anastomosing nerves and have funicles with a poorly defined aril. However, both *A. melleodora* and *A. dictyophleba* differ significantly from *A. corusca* in that they are glabrous; have phyllodes with a rounded apex, a gland positioned adjacent to the apical mucro and an open and net-like reticulum (rather than longitudinally elongated); globular inflorescences; sepals that are united almost to the apex; flat, papery pods; and have seeds with a larger areole (1.1–1.5 mm wide) that are transversely arranged in the pods.

Common name. Shimmer Wattle.

Acknowledgements

The authors would like to thank Bruce Maslin for his advice, expertise and highlighting the significance of this taxon, and BHP Western Australia Iron Ore for providing research support. Jerome would like to thank Mr Daniel Roberts, Ms. Jessica Waters and Mrs Ellen Whitten (nee Palmer) for their work ethic and humour in the field whilst researching this taxon.

References

Mangadas, L.G. & Fox, J.E.D. (2002). Reproductive potential of *Acacia* species in the central wheatbelt: variation between years. *Conservation Science of Western Australia* 4(3): 147–157.

Onshore Environmental Consultants Pty Ltd. (2014). Orebody 31 Level 2 Flora and Vegetation Survey. March 2014. Internal report prepared for BHP Billiton Iron Ore Pty Ltd. pp. 38–41.

Onshore Environmental Consultants Pty Ltd. (2015a). Targeted Survey for *Acacia* sp. East Fortescue. March 2015. Internal report prepared for BHP Billiton Iron Ore Pty Ltd.

Onshore Environmental Consultants Pty Ltd. (2015b). Targeted Survey for *Acacia* sp. East Fortescue. Phase2. August 2015. Internal report prepared for BHP Billiton Iron Ore Pty Ltd.

Preece, P.B. (1971). Contributions to the biology of Mulga. I. Flowering. *Australian Journal of Botany* 19: 21–38.

Smith, M.G. & Jones, A. (2018). *Threatened and Priority Flora list 5 December 2018*. Department of Biodiversity, Conservation and Attractions. https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-plants [accessed 13 February 2019].

Western Australian Herbarium (1998–). *FloraBase—the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions. https://florabase.dpaw.wa.gov.au/ [accessed 13 February 2019].

Jerome P. Bull[1], Steven J. Dillon[2] and Darren R. Brearley[1]

[1]Onshore Environmental Consultants Pty Ltd,
PO Box 227, Yallingup, Western Australia 6282
[2]Western Australian Herbarium, Biodiversity and Conservation Science,
Department of Biodiversity, Conservation and Attractions,
Locked Bag 104, Bentley Delivery Centre, Western Australia 6983
[1]Corresponding author, email: info@onshoreenvironmental.com.au